REMARKS

The Official Action mailed April 10, 2002, has been carefully reviewed along with the newly cited and applied prior art. The claims in the application are now claims 17-39. Applicants again note that applicants' claims define patentable subject matter and should be allowed. Accordingly, applicants again respectfully request favorable reconsideration and allowance.

The disclosure has been objected to because allegedly there is no summary, and correction has been required. This requirement is respectfully traversed.

The PTO has no authority to require an applicant to submit a specification containing a summary, although that format is suggested in the guidelines.

Nevertheless, applicants' specification does include a summary, which commences at page 5, line 5 of the specification.

Applicants respectfully request withdrawal of the objection and the requirement.

Claims 17-36 have been rejected as obvious from Jacquinot '159 in view of newly cited and applied Hosali et al USP 5,738,800 (Hosali). This rejection is respectfully traversed.

Jacquinot has been discussed at length in the record, and the commentary previously made is respectfully repeated by reference. Applicants respectfully request the examiner to particularly read applicants' Brief filed December 14, 2001, pages 2-4 and pages 8 and 9 in particular. Applicants submit that there is nothing in Hosali considered in combination with Jacquinot which would lead the person of ordinary skill in the art to the present invention; consequently, the claimed invention would not have been obvious from a consideration of these documents together.

Hosali actually does not teach what the rejection asserts. According to the specification, column 1, lines 46-49, the composition of Hosali comprises a surfactant **and** a compound which complexes with the silica and silicon nitrides. As more particularly evidenced by the bottom of column 1 and the top of column 2, the core of the invention of Hosali and therefore the strong teaching of Hoslai is the addition of a complexant compound which complexes with silica and silicon nitrides. But it is necessary to use the complexant in **combination** with a surfactant. Furthermore, as mentioned at column 2, lines 5-8, the concentration of the complexing agent must be sufficient to reach the aims of Hosali to block the removal of Si_3N_4 without greatly affecting the removal of SiO_2.

Moreover, as disclosed at column 32, line 37 *et seq*, "the surfactant used in conjunction with the complexing agent in this [Hosali] invention is not present to perform the usual function of surfactants in slurries…". The requirement to use a surfactant **in conjunction** with a complexing agent is repeated here. Moreover, as disclosed in example 1, table 1, the use of a surfactant (ZFSP) 0.2% **without complexant** (KHP) provides a **very poor selectivity.**

Accordingly, it is absolutely clear that the complexing agent taught by Hosali is a critical and essential ingredient in the Hosali composition, and its elimination would fly in the face of Hosali. To remove it would be to destroy Hosali for its intended function, clearly a non-obvious expedient. Certainly, the person of only ordinary skill in the art, reading Hosali, would never remove the complexing agent as this is a key requirement of Hosali.

Additionally, Hosali teaches the person of ordinary skill in the art to use a base or an amide such as KOH to adjust the pH of the slurry compositions to neutral pH. Claim 8 suggeststo the artisan of ordinary skill in the art to adjust the pH from 6 to 7. The requirement of pH is important and even essential in Hosali, since as disclosed in example 1, table 1, a very poor selectivity of polishing is obtained for

pH 4 or 10, whereas a good selectivity is obtained at pH 7, i.e. neutral.

This requirement for neutral pH is another teaching away from the present invention. The PTO's rejection depends on the alleged obviousness of the person of ordinary skill in the art, reading Hosali, to be guided by Hosali to change what is taught by Jacquinot. Clearly when such person skilled in the art reads Hosali, such person of ordinary skill in the art will see that an improvement is achieved if one operates at a pH of 7 rather than a pH of 4. Following Hosali will thus lead the person of ordinary skill in the art **away from** the present invention.

To summarize, Hoslai teaches the person of ordinary skill in the present art to use, contrary to the present invention, the combination of a complexing agent and a surfactant, and moreover at a neutral pH.

Additionally, and again contrary to the present invention, Hosali teaches the person of ordinary skill in the art to use abrasive particles other than those abrasive particles used by applicants, namely Hosali teaches the use of alumina, zirconia, silica, titania, barium carbonate and, above all, ceria, but not colloidal silica particles of any type, let alone those required according to the present invention.

Therefore, it is clear that Hosali teaches the person or ordinary skill in the art to go contrary to the present invention in a number of ways, it being noted that applicants' claims call for the use of a particular type of colloidal silica as well as an acid pH, now better specified as being between 1 and 5 in main claim 17, and preferably between 2 and 3 in certain subsidiary claims. In addition, applicants' surfactant is not used in combination with a complexing agent.

It should be accepted by the PTO that it is well-settled that to support a rejection based on a combination of references, there must have existed some motivation to make a change in order to establish *prima facie* obviousness. Here, the prior art itself provides no apparent reason for one ordinary skilled in the art to combine the silica particles of Jacquinot and only the surfactant of the Hosali.

Therefore, the present invention is not only novel (there is no rejection based on §102), but it is also unobvious from the prior art. There is particularly no suggestion to use applicants' colloidal silica particles in conjunction with a surfactant without a complexing agent, and certainly not at an acid pH. Applicants respectfully request withdrawal of the rejection.

New claims 37-39 have been added, which parallel certain claims previously pending, except that in these claims the critical and essential complexing agent required and taught by Hosali is more definitively excluded. These claims are patentable for the reasons pointed out above.

The additional newly cited document which has been cited and not relied upon by the PTO has also been noted, along with the implication that such document is deemed by the PTO to be insufficiently pertinent to warrant its application against any of applicants' claims.

Applicants respectfully request favorable reconsideration and allowance.

Respectfully submitted,

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Version with Markings to Show Changes Made

17. (Twice Amended) A process for mechanical chemical polishing in the integrated circuits industry, comprising

rubbing a layer with a support impregnated with an abrasive liquid composition, wherein

said layer is (1) a material selected from the group consisting of silicon oxide, silicon nitride, and a polymer having a low dielectric constant, or (2) one layer of silicon oxide and another layer of silicon nitride, and

said abrasive liquid composition comprises an aqueous acid suspension of

(i) individualized colloidal silica particles not linked to each other by siloxane bonds,

together with (ii) a surfactant, and

wherein said abrasive liquid composition is at a pH of 1-5.

20. (amended) The process of claim 19, wherein said rubbing is carried out with ~~said composition at pH between 1 and 5, and~~

said individualized colloidal silica particles which have diameters between 12 nm and 100 nm.

21. (amended) The process of claim 18, wherein said rubbing is carried out with ~~said composition at pH between 1 and 5,~~

~~and~~

said individualized colloidal silica particles which have diameters between 12 nm and 100 nm.

22. (amended) The process of claim 17, wherein said rubbing is carried out with ~~said composition at pH between 1 and 5,~~

~~and~~

said individualized colloidal silica particles which have diameters between 12 nm and 100 nm.